

Report Date:
20-Mar-18 17:06

Laboratory Report SC44479

Gulf Oil L.P.
281 Eastern Avenue
Chelsea, MA 02150
Attn: Andrew P. Adams

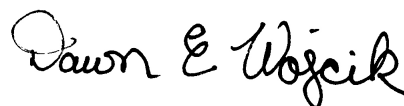
Project: Gulf Terminal - Chelsea, MA
Project #: Gulf Chelsea

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2972/2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00348
USDA # P330-15-00375
Vermont # VT-11393



Authorized by:
Dawn Wojcik
Laboratory Director



Eurofins Spectrum Analytical holds primary certification in the State of Massachusetts for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of Massachusetts does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.

Please note that this report contains 12 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Eurofins Spectrum Analytical, Inc.

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Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

Sample Summary

Work Order: SC44479
Project: Gulf Terminal - Chelsea, MA
Project Number: Gulf Chelsea

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
SC44479-01	Outfall 003	Surface Water	04-Mar-18 16:40	05-Mar-18 15:33
SC44479-02	TB-1 (Trip Blank)	Aqueous	04-Mar-18 00:00	05-Mar-18 15:33

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the reporting limit are reported as "<" (less than) the reporting limit in this report.

The samples were received 2.0 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group. If method or program required MS/MSD/Dup were not performed, sufficient sample was not provided to the laboratory.

Analyses for Total Hardness, pH, and Total Residual Chlorine fall under the state of Pennsylvania code Chapter 252.6 accreditation by rule.

There is no relevant protocol-specific QC and/or performance standards non-conformances to report.

Sample Acceptance Check Form

Client: Gulf Oil L.P.
Project: Gulf Terminal - Chelsea, MA / Gulf Chelsea
Work Order: SC44479
Sample(s) received on: 3/5/2018

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Were custody seals present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Were custody seals intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Were samples received at a temperature of $\leq 6^{\circ}\text{C}$?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples refrigerated upon transfer to laboratory representative?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were sample containers received intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples accompanied by a Chain of Custody document?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Did sample container labels agree with Chain of Custody document?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were samples received within method-specific holding times?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Summary of Hits

Lab ID: SC44479-01

Client ID: Outfall 003

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Total Suspended Solids	68.5		1.2	mg/l	SM2540D (11)

Please note that because there are no reporting limits associated with hazardous waste characterizations or micro analyses, this summary does not include hits from these analyses if included in this work order.

Sample Identification

Outfall 003

SC44479-01

Client Project #

Gulf Chelsea

Matrix

Surface Water

Collection Date/Time

04-Mar-18 16:40

Received

05-Mar-18

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>Cert.</i>
Volatile Organic Compounds													
<u>Volatile Organic Aromatics by SW846 8260</u>													
<u>Prepared by method SW846 5030 Water MS</u>													
71-43-2	Benzene	< 1.0		µg/l	1.0	0.3	1	SW846 8260C	06-Mar-18	06-Mar-18	GMA	1803116	
91-20-3	Naphthalene	< 1.0		µg/l	1.0	0.4	1	"	"	"	"	"	
<i>Surrogate recoveries:</i>													
460-00-4	4-Bromofluorobenzene	95			70-130 %			"	"	"	"	"	
2037-26-5	Toluene-d8	100			70-130 %			"	"	"	"	"	
17060-07-0	1,2-Dichloroethane-d4	107			70-130 %			"	"	"	"	"	
1868-53-7	Dibromofluoromethane	103			70-130 %			"	"	"	"	"	
Semivolatile Organic Compounds by GCMS													
<u>SVOCs by SIM</u>													
<u>Prepared by method SW846 3510C</u>													
50-32-8	Benzo (a) pyrene	< 0.049		µg/l	0.049	0.020	1	SW846 8270D SIM	07-Mar-18	12-Mar-18	MSL	1803171	
91-20-3	Naphthalene	< 0.049		µg/l	0.049	0.021	1	"	"	"	"	"	
<i>Surrogate recoveries:</i>													
205440-82-0	Benzo (e) pyrene-d12	52			30-130 %			"	"	"	"	"	
Extractable Petroleum Hydrocarbons													
<u>Prepared by method General Preparation SVOC</u>													
	Oil & Grease	< 1.00	OG	mg/l	1.00	0.915	1	EPA 1664B	13-Mar-18	14-Mar-18	SC	1803437	X
General Chemistry Parameters													
	pH	7.55	pH	pH Units			1	ASTM D 1293-99B	05-Mar-18 16:00	05-Mar-18 16:30	TN	1803095	X
	Total Suspended Solids	68.5		mg/l	1.2	0.5	1	SM2540D (11)	06-Mar-18	07-Mar-18	CMB	1803147	X

This laboratory report is not valid without an authorized signature on the cover page.

Sample Identification

TB-1 (Trip Blank)

SC44479-02

Client Project #

Gulf Chelsea

Matrix

Aqueous

Collection Date/Time

04-Mar-18 00:00

Received

05-Mar-18

<i>CAS No.</i>	<i>Analyte(s)</i>	<i>Result</i>	<i>Flag</i>	<i>Units</i>	<i>*RDL</i>	<i>MDL</i>	<i>Dilution</i>	<i>Method Ref.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Analyst</i>	<i>Batch</i>	<i>Cert.</i>
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Volatile Organic Compounds

Volatile Organic Aromatics by SW846 8260

Prepared by method SW846 5030 Water MS

71-43-2	Benzene	< 1.0		µg/l	1.0	0.3	1	SW846 8260C	06-Mar-18	06-Mar-18	GMA	1803116	
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91-20-3	Naphthalene	< 1.0		µg/l	1.0	0.4	1	"	"	"	"	"	
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Surrogate recoveries:

460-00-4	4-Bromofluorobenzene	93			70-130 %			"	"	"	"	"	
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2037-26-5	Toluene-d8	100			70-130 %			"	"	"	"	"	
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17060-07-0	1,2-Dichloroethane-d4	105			70-130 %			"	"	"	"	"	
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1868-53-7	Dibromofluoromethane	104			70-130 %			"	"	"	"	"	
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Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
SW846 8260C										
Batch 1803116 - SW846 5030 Water MS										
Blank (1803116-BLK1)					<u>Prepared & Analyzed: 06-Mar-18</u>					
Benzene	< 1.0		µg/l	1.0						
Naphthalene	< 1.0		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	47.4		µg/l		50.0		95	70-130		
Surrogate: Toluene-d8	49.4		µg/l		50.0		99	70-130		
Surrogate: 1,2-Dichloroethane-d4	52.2		µg/l		50.0		104	70-130		
Surrogate: Dibromofluoromethane	52.6		µg/l		50.0		105	70-130		
LCS (1803116-BS1)					<u>Prepared & Analyzed: 06-Mar-18</u>					
Benzene	22.6		µg/l		20.0		113	70-130		
Naphthalene	21.5		µg/l		20.0		107	70-130		
Surrogate: 4-Bromofluorobenzene	50.1		µg/l		50.0		100	70-130		
Surrogate: Toluene-d8	50.8		µg/l		50.0		102	70-130		
Surrogate: 1,2-Dichloroethane-d4	51.5		µg/l		50.0		103	70-130		
Surrogate: Dibromofluoromethane	51.8		µg/l		50.0		104	70-130		
LCS Dup (1803116-BSD1)					<u>Prepared & Analyzed: 06-Mar-18</u>					
Benzene	21.8		µg/l		20.0		109	70-130	4	20
Naphthalene	21.9		µg/l		20.0		110	70-130	2	20
Surrogate: 4-Bromofluorobenzene	51.3		µg/l		50.0		103	70-130		
Surrogate: Toluene-d8	50.0		µg/l		50.0		100	70-130		
Surrogate: 1,2-Dichloroethane-d4	50.8		µg/l		50.0		102	70-130		
Surrogate: Dibromofluoromethane	51.2		µg/l		50.0		102	70-130		

Semivolatile Organic Compounds by GCMS - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>SW846 8270D SIM</u>										
Batch 1803171 - SW846 3510C										
<u>Blank (1803171-BLK2)</u>					<u>Prepared: 07-Mar-18 Analyzed: 09-Mar-18</u>					
Benzo (a) pyrene	< 0.051		µg/l	0.051						
Naphthalene	< 0.051		µg/l	0.051						
<i>Surrogate: Benzo (e) pyrene-d12</i>	<i>0.714</i>		µg/l		<i>1.02</i>		<i>70</i>	<i>30-130</i>		
<u>LCS (1803171-BS2)</u>					<u>Prepared: 07-Mar-18 Analyzed: 09-Mar-18</u>					
Benzo (a) pyrene	0.711		µg/l	0.051	1.02		70	40-140		
Naphthalene	0.444		µg/l	0.051	1.02		44	40-140		
<i>Surrogate: Benzo (e) pyrene-d12</i>	<i>0.602</i>		µg/l		<i>1.02</i>		<i>59</i>	<i>30-130</i>		
<u>LCS Dup (1803171-BSD2)</u>					<u>Prepared: 07-Mar-18 Analyzed: 09-Mar-18</u>					
Benzo (a) pyrene	0.685		µg/l	0.051	1.02		67	40-140	4	20
Naphthalene	0.430		µg/l	0.051	1.02		42	40-140	3	20
<i>Surrogate: Benzo (e) pyrene-d12</i>	<i>0.571</i>		µg/l		<i>1.02</i>		<i>56</i>	<i>30-130</i>		

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>EPA 1664B</u>										
Batch 1803437 - General Preparation SVOC										
<u>Blank (1803437-BLK1)</u>					<u>Prepared: 13-Mar-18 Analyzed: 14-Mar-18</u>					
Oil & Grease	< 1.04		mg/l	1.04						
<u>LCS (1803437-BS1)</u>					<u>Prepared: 13-Mar-18 Analyzed: 14-Mar-18</u>					
Oil & Grease	32.6		mg/l	1.03	40.8		80	78-114		

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>ASTM D 1293-99B</u>										
Batch 1803095 - General Preparation										
<u>Duplicate (1803095-DUP1)</u>										
pH	7.56		pH Units			7.55			0.1	5
<u>Reference (1803095-SRM1)</u>										
pH	6.02		pH Units		6.00		100	97.5-102.5		
<u>Reference (1803095-SRM2)</u>										
pH	6.01		pH Units		6.00		100	97.5-102.5		
<u>SM2540D (11)</u>										
Batch 1803147 - General Preparation										
<u>Blank (1803147-BLK1)</u>										
Total Suspended Solids	< 0.5		mg/l	0.5						
<u>LCS (1803147-BS1)</u>										
Total Suspended Solids	104		mg/l	10.0	100		104	90-110		

Notes and Definitions

dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
OG	The required Matrix Spike and Matrix Spike Duplicate (MS/MSD) for Oil & Grease method 1664B can only be analyzed when the client has submitted sufficient sample volume. An extra liter per MS/MSD is required to fulfill the method QC criteria. Please refer to Chain of Custody and QC Summary (MS/MSD) of the Laboratory Report to verify ample sample volume was submitted to fulfill the requirement.
pH	The method for pH does not stipulate a specific holding time other than to state that the samples should be analyzed as soon as possible. For aqueous samples the 40 CFR 136 specifies a holding time of 15 minutes from sampling to analysis. Therefore all aqueous pH samples not analyzed in the field are considered out of hold time at the time of sample receipt. All soil samples are analyzed as soon as possible after sample receipt.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Batch Summary

1803095

General Chemistry Parameters

1803095-DUP1
1803095-SRM1
1803095-SRM2
SC44479-01 (Outfall 003)

1803116

Volatile Organic Compounds

1803116-BLK1
1803116-BS1
1803116-BSD1
SC44479-01 (Outfall 003)
SC44479-02 (TB-1 (Trip Blank))

1803147

General Chemistry Parameters

1803147-BLK1
1803147-BS1
SC44479-01 (Outfall 003)

1803171

Semivolatile Organic Compounds by GCMS

1803171-BLK2
1803171-BS2
1803171-BSD2
SC44479-01 (Outfall 003)

1803437

Extractable Petroleum Hydrocarbons

1803437-BLK1
1803437-BS1
SC44479-01 (Outfall 003)

S711062

Semivolatile Organic Compounds by GCMS

S711062-CAL1
S711062-CAL2
S711062-CAL3
S711062-CAL4
S711062-CAL5
S711062-CAL6
S711062-CAL7
S711062-CAL8
S711062-CAL9
S711062-ICV1
S711062-LCV1
S711062-LCV2
S711062-TUN1

S817373

Volatile Organic Compounds

S817373-CAL1
S817373-CAL2
S817373-CAL3
S817373-CAL4
S817373-CAL5
S817373-CAL6
S817373-CAL7
S817373-CAL8
S817373-CAL9
S817373-ICV1
S817373-LCV1
S817373-LCV2
S817373-TUN1

S817392

Volatile Organic Compounds

S817392-CCV1
S817392-TUN1

S817598

Semivolatile Organic Compounds by GCMS

S817598-CCV1
S817598-TUN1

S817599

Semivolatile Organic Compounds by GCMS

S817599-CCV1
S817599-TUN1